

# Brushless DC-Servomotors

with integrated Speed Controller

4,4 mNm  
4,8 W

## 1935 ... BRC

Values at 22°C and nominal voltage	1935 S	006 BRC	009 BRC	012 BRC	
Power supply electronic	$U_P$	4 ... 18	4 ... 18	4 ... 18	V DC
Power supply motor	$U_{mot}$	1,7 ... 18	1,7 ... 18	1,7 ... 18	V DC
Nominal voltage for motor	$U_N$	6	9	12	V
No-load speed (at $U_N$ )	$n_0$	8 600	8 600	8 100	min <sup>-1</sup>
Torque constant	$K_M$	6,48	9,92	13,97	mNm/A
Starting torque	$M_A$	4	4	4	mNm
Standby current for electronic (at $U_N$ )	$I_{el}$	0,025	0,025	0,025	A
Speed range (up to 2x $U_N$ , max, 18V)		1 000 ... 17 400	1 000 ... 17 500	1 000 ... 12 300	min <sup>-1</sup>
Shaft bearings		ball bearings, preloaded			
Shaft load max.:					
– with shaft diameter	3				mm
– radial at 3 000 min <sup>-1</sup> (3 mm from mounting flange)	10				N
– axial at 3 000 min <sup>-1</sup> (push / pull)	1				N
– axial at standstill (push / pull)	25				N
Shaft play:					
– radial	≤ 0,015				mm
– axial	= 0				mm
Operating temperature range		-25 ... +85			°C
Housing material		mounting face in aluminium, housing in plastic			
Mass		31			g

### Rated values for continuous operation

Rated torque	$M_N$	3,3	3,6	3,1	mNm
Rated current (thermal limit)	$I_N$	0,63	0,5	0,34	A
Rated speed	$n_N$	2 500	2 500	2 500	min <sup>-1</sup>

### Interface / range of functions

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Configuration from Motion Manager 5.0	via USB Programming Adapter
Operating modes	Integrated speed control via PI controller. Setpoint Input via analog voltage input. Can optionally be operated as a voltage controller or in fixed speed mode.
Speed range	Sensorless operation, from 1000 min <sup>-1</sup>
Additional functions	Digital input as switching input for defining the direction of rotation of the motor Digital output as frequency output. Integrated current limitation to protect against thermal overload.

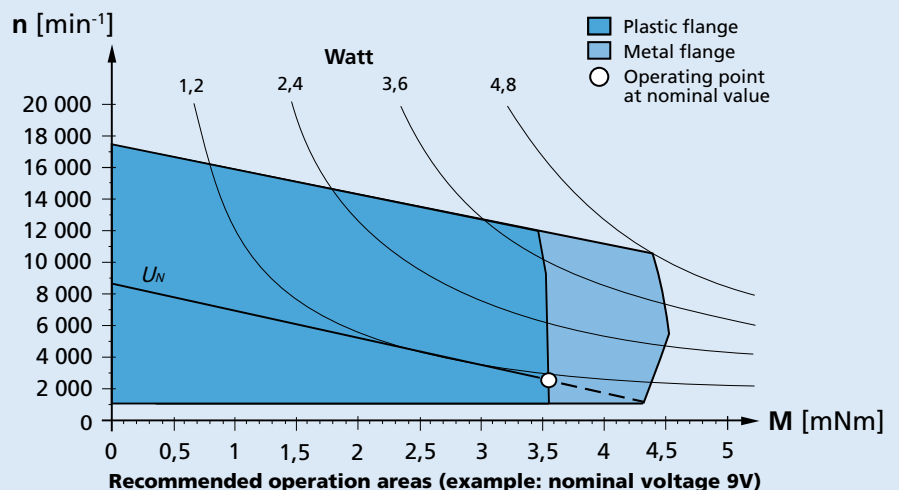
#### Note:

The display shows the range of possible operation points of the drives at a given ambient temperature of 22°C.

The diagram indicates the recommended speed in relation to the available torque at the output shaft.

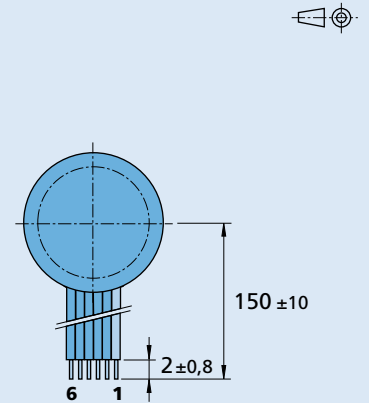
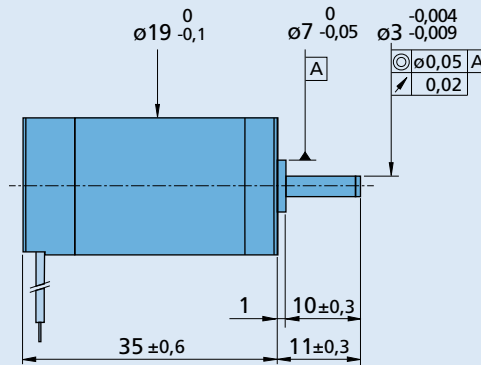
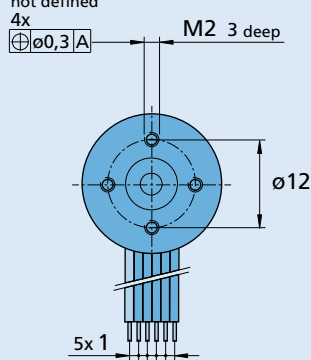
It includes the assembly on a plastic- as well as on a metal flange (assembly method: IM B 5).

The nominal voltage linear slope describes the maximal achievable operating points at nominal voltage. Any points of operation above this linear slope will require a supply voltage  $U_{mot} > U_N$ .



### Dimensional drawing

Orientation with respect to motor cable  
not defined



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### Option, cable and connection information

Example product designation: **1935S012BRC-5809**

Option	Type	Description	Connection			
5809	Single Leads	single leads, length 150 mm, red (+) / black (-)	<b>Name</b>	<b>Function</b>	<b>Inputs-outputs</b>	<b>Description</b>
5929	Shaft load	axial shaft load at standstill up to 150 N	1 (red)	$U_p$	electronic supply	4 V DC - 18 V DC
			2	$U_{mot}$	motor supply	1,7 V DC - $2 \times U_N$ (max. 18V)
			3	GND	ground	
			4	$U_{soll}$	Speed command	0 - 10 V DC   > 10 V DC - max. $U_p$ not defined
			5	DIR	direction of rotation	on ground or $U < 0,5 \text{ V} = \text{CCW}$ , $U > 3 \text{ V} = \text{CW}$
			6	FG	frequency output	(max. $U_p$ , 1 max. 15 mA) 3 lines per revolution
			<b>Caution:</b> Incorrect lead connection will damage the motor electronics!			
			<b>Standard cable</b> PVC ribbon cable 6 x AWG 28			
			<b>Note:</b> For details on the connection assignment, see device manual			

### Product combination

Precision Gearheads / Lead Screws	Encoders	Drive Electronics	Cables / Accessories
		Integrated	To view our large range of accessory parts, please refer to the "Accessories" chapter.